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Chapter 3
Development of Batch Type Convection Dryer for Fish Cracker Manufacturing

Muhammad Naim Leman, Shahrol Mohamaddan, Ana Sakura Zainal Abidin, Mohamad Syazwan Zafwan Mohamad Suffian, Khairul Fikri Tamrin, Rubiyah Baini, and Akihiko Hanafusa

Abstract Manual production of fish cracker is inherenly inefficient with low productivity. Mechanisation and automation of the drying process which constitutes a major process would contribute to increase production. In this study, a batch type convection dryer for fish cracker with a capacity of 2 kg was developed. The prototype with a dimension of 89-cm length, 72-cm width and 60-cm height consists of a drying chamber, moving tray, transmission system, heating element and control system. A moving tray concept was applied for the machine design. The maximum temperature that can be reached in the chamber without load is 40.0 °C. Two different air velocities of 1.5 m/s and 2.0 m/s were applied in both simulation and experimental study. The higher air velocity was observed to shorten the time

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